

What is claimed is:

1. A method for generating random number, comprising the steps of:  
applying random control voltages to an oscillating circuit with an oscillating frequency control section to generate random oscillation voltages which correspond to frequency signals from said oscillating circuit on said random control voltages, respectively,  
defining a given threshold value for amplitudes of said oscillation voltages, and  
allotting numerals "0" and "1" to said oscillation voltages on a magnitude relation between said threshold value and said amplitudes of said oscillation voltages to generate a binary random number.
2. The generating method as defined in claim 1, wherein said oscillation frequency control section includes a variable capacitance diode.
3. The generating method as defined in claim 1, wherein said random control voltages are generated at a noise generating circuit.
4. The generating method as defined in claim 3, wherein said noise generating circuit includes a noise generating element and a noise amplifying element.
5. The generating method as defined in claim 4, wherein said noise generating element includes a diode.
6. The generating method as defined in claim 4, wherein said noise amplifying element includes an operational amplifier.
7. The generating method as defined in claim 1, wherein said oscillating circuit is constructed as a digital oscillating circuit.
8. The generating method as defined in claim 1, wherein said oscillating circuit is constructed as an analog oscillating circuit.
9. The generating method as defined in claim 1, wherein said oscillation voltages are digitally converted at an A/D converter.
10. The generating method as defined in claim 1, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said random control voltages are applied to said second oscillating circuit to generate and oscillate frequency signals from said second oscillating circuit, and said threshold value is

defined for amplitudes of oscillation voltages of said frequency signals to generate said binary random number through the allocation of numerals "0" and "1" on a magnitude relation between said threshold value and said amplitudes of said oscillation voltages.

11. The generating method as defined in claim 1, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said random control voltages are applied to said first oscillating circuit to generate and oscillate frequency signals from said second oscillating circuit, and said threshold value is defined for amplitudes of oscillation voltages of said frequency signals to generate said binary random number through the allocation of numerals "0" and "1" on a magnitude relation between said threshold value and said amplitudes of said oscillation voltages.

12. The generating method as defined in claim 1, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said random control voltages are applied to said first oscillating circuit and said second oscillating circuit to generate and oscillate frequency signals from said second oscillating circuit, and said threshold value is defined for amplitudes of oscillation voltages of said frequency signals to generate said binary random number through the allocation of numerals "0" and "1" on a magnitude relation between said threshold value and said amplitude of said oscillation voltages.

13. A random number generator comprising:  
an oscillating circuit with an oscillation frequency control section,  
a control voltage applying means for applying random control voltages to said oscillating circuit,  
a processing means for defining a threshold value to random oscillation voltages which correspond to frequency signals from said oscillating circuit and allotting numerals "0" and "1" to said random oscillation voltages on a magnitude relation between said threshold value and amplitudes of said random oscillation voltages.

14. The random number generator as defined in claim 13, wherein said oscillation frequency control section includes a variable capacitance diode.

15. The random number generator as defined in claim 13, wherein said control voltage applying means includes a noise generating circuit.

16. The random number generator as defined in claim 15, wherein said noise generating circuit includes a noise generating element and a noise amplifying element.

17. The random number generator as defined in claim 16, wherein said noise generating element includes a diode.

18. The random number generator as defined in claim 16, wherein said noise amplifying element includes an operational amplifier.

19. The random number generator as defined in claim 13, wherein said oscillating circuit is constructed as a digital oscillating circuit.

20. The random number generator as defined in claim 13, wherein said oscillating circuit is constructed as an analog oscillating circuit.

21. The random number generator as defined in claim 13, wherein said oscillation voltages are digitally converted at an A/D converter.

22. The random number generator as defined in claim 13, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said control voltage applying means is connected with said second oscillating circuit to apply said control voltages to said second oscillating circuit and to oscillate frequency signals from said second oscillating circuit.

23. The random number generator as defined in claim 13, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said control voltage applying means is connected with said first oscillating circuit to apply said control voltages to said first oscillating circuit and to oscillate frequency signals from said second oscillating circuit.

24. The random number generator as defined in claim 13, wherein said oscillating circuit includes a first oscillating circuit and a second oscillating circuit electrically connected with said first oscillating circuit, and said control voltage applying means is connected with said first oscillating circuit and said second oscillating circuit to apply said control voltages to said first oscillating circuit and said second oscillating circuit and to oscillate frequency signals from

said second oscillating circuit.